

A NEW SPECIES OF TELEOSTEI: *PUNTIUS POOKODENSIS* (CYPRINIDAE)
FROM WAYANAD, KERALA, INDIA¹

T.V. ANNA MERCY^{2,3} AND EAPEN JACOB^{2,4}

¹Accepted March 23, 2006

²College of Fisheries, Kerala Agricultural University, Panangad, Kochi 682 506, Kerala, India.

³Email: annamercy2002@yahoo.co.in

⁴Email: eappenjacob@rediffmail.com

Puntius pookodensis is described as a new species of *Puntius* from Pookode Lake, Wayanad, Kerala. It is characterised by the combination of the following characters: serrated, spiny dorsal ray, incomplete lateral line, 22-23 scales in lateral series, lateral transverse rows 4/3 ½, 18 circumferential scales, a shoulder spot and one or two spots on the caudal peduncle. The species is compared with its closest relatives, the widespread *Puntius ticto* and *P. punctatus* found in southern India, and with a look-alike *P. shalynius* from north-east India.

Key words: Cyprinidae, *Puntius pookodensis* sp. nov., *Puntius ticto*, *Puntius punctatus*, Kerala

The genus *Puntius* Hamilton, belonging to Family Cyprinidae, represented by small to tiny fishes, is widely distributed in south and south-east Asia. The species of this genus usually have a single pair of maxillary barbels or none, and the principal dorsal spiny ray may be smooth, osseous or serrated. During a survey of the Kerala waters for ornamental species, the authors from Fisheries College collected an interesting colourful *Puntius* species from a remote lake in the pristine Wayanad hills. This, on further study, turned out to be new to science and is described here.

Based on earlier studies (Day 1875-78, 1889; Talwar and Jhingran 1991; Jayaram 1991, 1999; Menon 1999; Pethiyagoda 1991) and recent descriptions (Vishwanath and Laisram 2004), there are 17 species in the Indian subcontinent sharing common features with the new species, namely absence of barbels and serrated principal spiny ray of dorsal fin. A key to all these species is provided, mostly based on colour pattern, since this character seems to be species specific.

MATERIAL AND METHODS

Descriptions are based on 27 specimens, 22 of them deposited in the fish collections of the Zoological Survey of India, Southern Regional Station, Chennai and five in the fish collections of the Zoological Survey of India, Calicut. Measurements follow standard practices and the mean values followed by range in parenthesis are provided.

RESULTS & DISCUSSION

Puntius pookodensis sp. nov. (Figs 1, 2)

Holotype: F.7635, ZSI/SRS (Zoological survey of India/

Southern Regional Station) 40 mm standard length (SL), Pookode lake 76° 01' E, 76° 18' E and 11° 7' N, 11° 42' N, Wayanad district, Kerala, India, collected by Anna Mercy and Eapen Jacob, November 2004.

Paratype: F.7636, ZSI/SRS, 21 exs. 26.0-42.0 mm. SL., data same as for holotype. 5 exs in the Zoological Survey of India, Calicut ZSI. (WGRS) CLT No. V/F. 13258.

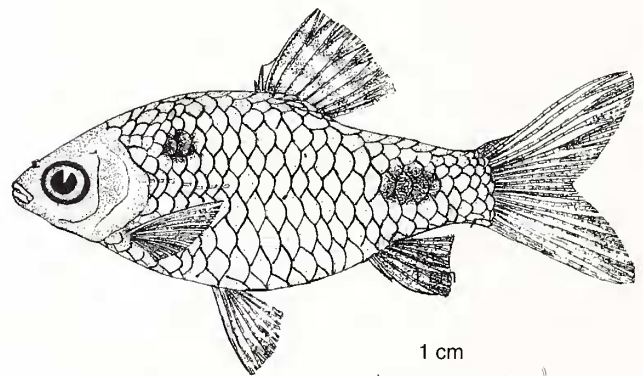


Fig. 1: *Puntius pookodensis* sp. nov. Female

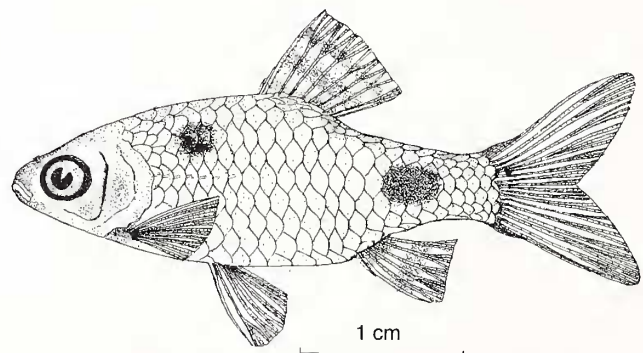


Fig. 2: *Puntius pookodensis* sp. nov. Male

Diagnosis: An elongate *Puntius* species not more than the 43.0 mm SL, without barbels and with an osseous principal spiny dorsal ray and mostly with seven branched rays; an incomplete lateral line with 6-8 pored scales, 22-23 lateral scale rows, with 4½/3½ lateral transverse scales; 18 circumferential scales, a shoulder spot on the lateral line and one or two spots on the caudal peduncle.

Description: D. iii/6(2), 7(21), 8(2); P. 1/12-13; V. 1/7/I; A. iii/5; C. 19. Body elongate, its depth 3.87 (3.97-4.27) in total length (TL), 3.10 (2.83-3.27) in standard length (SL); its width 2.21 (1.83-2.44) in its depth; head small, its length 4.46 (3.90-4.90) in TL, 3.49 (3.10-3.80) in SL; eyes large, its diameter 3.08 (2.75-3.75) in head length (HL), 1.07 (1.00-1.43) in interorbital width, 0.88 (0.71-1.17) in snout; snout pointed 3.54 (2.86-4.00) in HL; pectoral short, 1.36 (1.25-1.57) in HL; caudal peduncle slender, its depth 1.46 (1.30-1.60) in its length, gill rakers 6 on the lower arm of the first gill arch and 2-3 on the upper arm.

Scales large, lateral line incomplete, pored scales ceasing after 6th or 8th scales; scales along lateral line 22-23; 4 rows in lateral transverse series from dorsal fin origin to lateral line, 3.5 from lateral line to pelvic fin base; predorsal scales 8-9; post dorsal 10-10½; prepelvic 9-10; circumferential scales 18, circumpeduncular scales 12.

Colour: Fresh specimens with an iridescent silver body and yellowish fins; a shoulder spot on the 3rd to 4th scale along lateral line and another prominent spot on the 16th to 17th scale and sometimes a faint spot on the 19th and 20th scales, a thin dark line extends from the anterior to the posterior spot. Maximum length observed: 43.0 mm SL.

Distribution: INDIA: Kerala, Wayanad district, Pookode lake.

Etymology: The new species is named after the type locality.

Comparative material: *Puntius ticto*: F 6034 ZSI/SRS, 8 exs. 29.0-35.0 mm SL; 8.x.1998 Singaperumal koil paddy field, Chennai, coll. M.B. Raghunathan; F.6620, 7 exs. 25.0-34.0 mm SL, 18.iv.2004, Singaperumal koil paddy field coll. M.B. Raghunathan.

Puntius punctatus: 2 exs. 47.0-49.0 mm SL. Muvattupuzha river, coll. Anna Mercy & Eapen Jacob. September 2004.

Remarks: Seventeen *Puntius* species share certain common characters, namely absence of barbels and a serrated principal spiny ray of the dorsal fin. However, each bears some unique features by which they can be differentiated from the rest. The new species bears close resemblance to the two spotted species, *Puntius ticto* and *Puntius punctatus*, the former known to be widely distributed in India and replaced by the latter in the south-western tip of peninsular India, and perhaps also in Sri Lanka. However, the new species differs

from *punctatus* in its incomplete lateral line system and in the position of the spots. The shoulder spot being present on one scale row below the lateral pored scale and presence of a larger spot in the middle of the caudal peduncle in *punctatus* versus shoulder spot on the L.I. row and the caudal spot at the anterior half of the caudal peduncle in the new species. The new species can be separated from *P. ticto* in its less deep body, circumferential scales (18 versus 22 in *ticto*).

The species further bears some resemblance in the lesser number of branched dorsal rays (7) and paired caudal spots to *P. shalynius* found in the streams, lakes and pools in the Khasi and Jaintia Hills, Meghalaya. However, the new species differs from the same in the presence of a variable number of branched rays in the dorsal (6-8), the presence of a shoulder spot and in the caudal spots, which is paired and of equal size in *shalynius*; in the new species the anterior caudal spot is larger and the posterior spot is fainter or absent in many specimens. The new species seems to have evolved in isolation in Pookode lake in the pristine Wayanad Hills in southern Western Ghats from the same stock as the widespread *P. ticto*, as would have its congener *shalynius* in the Khasi and Jaintia Hills in the north-east.

KEY TO THE *PUNTIUS* SPECIES WITH A STRONG, OSSEOUS AND SERRATED PRIMARY DORSAL FIN RAY AND WITHOUT BARBELS

1. Lateral line scales (L.I.) more than 30 2
- Lateral line scales (L.I.) less than 30 3
2. Scales large, L.I. 31-33, no spots on body *P. nangalensis*
- Scales small, L.I. 36-39, a spot near caudal base.... *P. guganio*
3. Body with vertical bands 4
- Body without vertical bands but with one or two spots/blotches 11
4. Body with 4 vertical bands *Puntius phutunio*
- Body with 3 or less number of vertical bands 5
5. L.I. complete, body with 3 vertical bands 6
- L.I. mostly incomplete, body with variable number of bands 7
6. Body deep, 2 in SL, L.tr. 5/4 *P. nigrofasciatus*
- Body less deep, 2.5 in SL, L.tr. 4.5/3.5 *P. setnai*
7. Shoulder band absent, bands only on caudal peduncle 8
- Shoulder band always present 9
8. Two vertical bands on caudal peduncle; dorsal and anal base dark, L.I. incomplete *Puntius gelius*
- Body with a single band around caudal peduncle, fin bases not dark, L.I. complete or incomplete *P. ornatus*
9. Dark saddle shaped band between eyes; dorsal, ventral and anal fins dark, L.tr. scales between L.I. and pelvic fin about 4½ *P. bandula*
- Coloration not as above; dorsal with bands or spots, L.tr. scale rows less than 4½ 10
10. Circumpeduncular scales 12 *P. bizonatus*
- Circumpeduncular scales 8-10 *P. cuningii*
11. Two spots on body, a shoulder spot and one on caudal peduncle 12

NEW DESCRIPTIONS

- | | |
|---|---|
| <p>— Shoulder spot absent 16</p> <p>12. Lateral line complete; shoulder spot not on L.1 13</p> <p>— Lateral line incomplete; shoulder spot on L.1 14</p> <p>13. Shoulder spot one row above 3rd scale of L.1.; dorsal fin not spotted <i>P. stoliczkanus</i></p> <p>— Shoulder spot one row below L.1.; dorsal fin spotted in rows <i>P. punctatus</i></p> <p>14. Body slender, circumferential scales less than 20 15</p> <p>— Body deeper, circumferential scales 22 <i>P. ticto</i></p> <p>15. Dorsal fin with 8 branched rays, L.tr. 3½ / 3½ caudal spot above tip of anal fin <i>P. manipurensis</i></p> <p>— Dorsal usually with 7 branched rays rarely 8; L.tr. 4-4½ / 3½; caudal spot above anal fin, another faint spot posterior to this <i>P. pookodensis</i></p> | <p>16. Two spots on caudal peduncle <i>P. shalynius</i></p> <p>— A single blotch on caudal peduncle <i>P. conchoniuis</i></p> |
|---|---|

ACKNOWLEDGEMENTS

We thank the National Agricultural Technology Project, Indian Council of Agricultural Research (NATP-ICAR) and National Bureau of Fish Genetic Resources, Lucknow (NBFGR) for financial assistance. We are also grateful to the Director, Zoological Survey of India and the Officer-in-Charge, Southern Regional Station, Chennai, and the College of Fisheries, Panangad, for facilities provided.

REFERENCES

- | | |
|--|---|
| <p>DAY, F. (1875-78): The Fishes of India; being a Natural History of the Fishes known to inhabit the Seas and Freshwaters of India, Burma and Ceylon. Jagminder Book Agency, New Delhi.</p> <p>DAY, F. (1889): The Fauna of British India, including Ceylon and Burma. Fishes. Taylor and Francis, London.</p> <p>JAYARAM, K.C. (1991): Revision of the Genus <i>Puntius</i> Hamilton from the India Region (Pisces: Cypriniformes, Cyprinidae) <i>Rec. zool. Surv. India, Occ. Paper. No. 135</i>: 1-178.</p> <p>JAYARAM, K.C. (1999): The Freshwater Fishes of the Indian Region. Narendra Publishing House, New Delhi.</p> | <p>MENON, A.G.K. (1999): Check list – Freshwater Fishes of India. <i>Rec. zool. Surv. India, Occ. Paper No. 175</i>: 366.</p> <p>PETHIYAGODA, R. (1991): Freshwater Fishes of Sri Lanka. The Wildlife Heritage Trust of Sri Lanka, Colombo.</p> <p>TALWAR, P.K. & A.G. JHINGRAN (1991): Inland Fishes of India and Adjacent Countries. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.</p> <p>VISHWANATH, W. & J. LAISRAM (2004): Two new species of <i>Puntius</i> Hamilton-Buchanan (Cypriniformes: Cyprinidae) from Manipur, India with an account of <i>Puntius</i> species from the state. <i>J. Bombay Nat. Hist. Soc. 101(1)</i>: 130-137.</p> |
|--|---|

